

**INFORMATION DELIVERY SYSTEM**  
**FOR PROVIDING SENDERS WITH A RECIPIENT'S**  
**MESSAGING PREFERENCES**

Sub A

### Cross Reference to Related Applications

5 This application is related to the following co-pending applications filed concurrently herewith and commonly assigned to the assignee of this application: US Patent Application Number aa/aaa,aaa, entitled MESSAGING SYSTEM HAVING RECIPIENT PROFILING (Attorney Docket No. E-848) and US Patent Application Number aa/aaa,aaa, entitled RECIPIENT CONTROL OVER ASPECTS OF INCOMING MESSAGES (Attorney Docket No. F-126), both of which are specifically incorporated herein by reference.

## Field of the Invention

This invention relates generally to information delivery systems. More particularly, in the preferred embodiments, this invention is directed to techniques  
15 allowing a recipient, receiving messages from a plurality of different senders desiring to communicate with the recipient, to control various aspects of the messages techniques for ensuring that the senders have access to updated recipient preferences.

## Background of the Invention

20           Traditionally, recipients (individuals, businesses and households) have had little opportunity to influence the mail that is sent to them. Merely having a post office address has served as an open invitation to mailers (one type of message senders) wishing to communicate with the recipient. Historically, recipients have been limited in their ability to control any aspects of the mail. On  
25   the other hand, senders understand little about the messaging preferences of the recipients and their interests.

Many factors place increased demands on the effectiveness of messages. First, the costs of generating and delivering messages is always increasing. Second, senders must compete for the recipient's attention due to the large number of messages that are typically received. Third, recipients need timely  
5 and easy access to their messages so that they are able to retrieve and discern them efficiently. Numerous other factors exist.

Generally, various postal authorities around the world provided some narrow ability for a recipient to control the mail. One service is mail forwarding where the mail is redirected from an original address specified by the sender to  
10 another address specified by the recipient. This service may be utilized when the recipient moves. Although this service generally works well, it suffers from certain drawbacks and disadvantages. As an example, delays are typically involved in redirecting the mail. Furthermore, the sender is typically unaware of the new address and may continue to send subsequent mail to the old address.  
15 Address correction databases that contain updated information about the recipient's address are only updated periodically and must be accessed by the sender to obtain that new information. This delay has potential negative consequences for both the sender and the recipient. As another example, delivery costs for the postal authority are increased because the mail is often  
20 routed to the old address before being forwarded to the new address. Therefore, due to all of the above, the sender and the recipient suffer a loss in quality of service while cost for the postal authority increase.

In addition to or as an alternative to notifying the postal authority and described above, the recipient who has moved may attempt to provide various  
25 senders with the new address. However, this is time consuming and generally not very effective since it may only pertain to physical mail.

Another type of service is mail holding where the mail is held by the postal authority and not delivered to the recipient. This service may be utilized when the recipient is away from home for a period of time. Although this service  
30 generally works well, it suffers from certain drawbacks and disadvantages. As an

example, mail tends to collect at the postal authority facilities and this increases storage and handling costs for the postal authority. Furthermore, the sender is typically unaware of the hold that has been placed on delivery and may continue to send subsequent mail believing that the recipient is receiving mail. This  
5 compounds the storage problem for the postal authority and the timeliness issue for the sender and the recipient.

Therefore, due to all of the above, the sender and the recipient suffer a loss in quality of service while costs for the postal authority are generally increased. As a result, there is a need for improved exchange of information  
10 between the recipients and the senders that allow for a more efficient and effective process for senders to provide recipients with messages.

### **Summary of the Invention**

The present invention provides a information delivery system and methods for improving the collection and dissemination of recipient preferences for  
15 messages. Generally, this is accomplished by collecting recipient preference data and making it available to a plurality of senders for their use in preparing messages intended for a selected recipient.

In accordance with the present invention, there is provided an information delivery system includes a web server in operative communication with a plurality  
20 of recipients and a plurality of senders, the plurality of senders desirous of generating messages intended for the plurality of recipients, respectively. The web server includes a plurality of recipient preference profiles corresponding to the plurality of recipients, respectively, and a plurality of sender profiles corresponding to the plurality of senders, respectively. Each of the recipient  
25 preference profiles includes respective information directed to the recipient's preferences for receiving messages and the web server provides the plurality of senders with access to the plurality of recipient preference profiles. The web server maintains a relationship between a log of recipient preference profiles out of the plurality of recipient preference profiles that have been accessed by a

particular sender. For each of the recipient preference profiles in the log of recipient preference profiles, the web server provides a change notification to the particular sender of a change in the recipient preference profile.

In accordance with the present invention, a method of operating a web  
5 server and a data structure are also provided.

Therefore, it is now apparent that the present invention substantially overcomes the disadvantages associated with the prior art. Additional advantages of the invention will be set forth in the description that follows, and in part will be obvious from the description, or may be learned by practice of the  
10 invention. The objects and advantages of the invention may be realized and obtained by means of the instrumentalities and combinations particularly pointed out in the appended claims.

#### **Brief Description of the Drawings**

The accompanying drawings, which are incorporated in and constitute a  
15 part of the specification, illustrate presently preferred embodiments of the invention, and together with the general description given above and the detailed description of the preferred embodiments given below, serve to explain the principles of the invention. As shown throughout the drawings, like reference numerals designate like or corresponding parts.

20 Fig. 1 is a simplified representation of an information delivery system including a web server, a plurality of plurality of recipients and a plurality of senders, all in electronic communication with the web server, in which the present invention may be incorporated.

Fig. 2 is a schematic representation of a template for a recipient  
25 preference profile describing various parameters intended to control aspects of messages sent by the senders that are intended for the recipient, in accordance with the present invention.

Fig. 3 is a schematic representation of a template for a sender profile describing various parameters intended to control aspects of how and when the

web server communicates recipient preference profile data to the sender, in accordance with the present invention.

Fig. 4 is a schematic diagram of information flow between the web server, the recipients and the senders that facilitates the delivery of recipient preference profile data to the senders in accordance with the present invention.

### **Detailed Description of the Preferred Embodiments**

Referring to Fig. 1, an example of an information delivery system 100 in which the present invention may be incorporated is shown. The information delivery system 100 includes a web server 110, a plurality of recipients 180 and a plurality of senders 155. The plurality of recipients 180 and the plurality of senders 155 are in communication with the web server 110 over any suitable communication network (LAN, WAN, telephone line, Internet, etc.) 102. In conventional fashion, the web server 110 may be any computer system (hardware, operating system, Web server application software, TCP/IP protocols and the Web site content or pages) that provides World Wide Web services on the Internet. Generally, the web server 180 collects message preference data from the recipients 180 and makes it available to the senders 155 so that the senders 155 may more efficiently and effectively communicate their messages to the recipients 180. Therefore, those skilled in the art will recognize that the web server 110 may employ any suitable combination of computer hardware and software (control system) to facilitate the storage, access and processing of information and various communications that are required as described in greater detail below.

The recipients 180 may be geographically dispersed and connect to the web server 110 using any conventional type of computer based communication system. As an example, a recipient 180 may have a computer and gain Internet access over a standard telephone line via a modem using one of the various Internet Service Providers (ISP), such as: America Online or CompuServe. As another example, a recipient 180 may gain Internet access using Web TV.

Those skilled in the art will recognize that not each recipient 180 need utilize the same type of computer based communication system in contacting the web server 110.

In analogous fashion, the senders 155 may be geographically dispersed and connect to the web server 110 using any conventional type of computer based communication system. Furthermore, to assist in the creation, addressing, output generation and/or delivery of messages, the senders 155 may employ any number and variety of messaging systems (not shown). Examples of messaging systems are: a traditional postage meter, such as the Personal Post™ meter; an open system postage meter, such as the ClickStamp™ online postage system employing a personal computer and a dot matrix (laser, ink jet, thermal transfer, etc.) printer; and an inserter system, such as the 8 Series™ inserting system; all available from Pitney Bowes of Stamford, Connecticut. Still other examples of messaging systems are shipping and logistics systems, addressing systems, such as the AddressRight™ system available from Pitney Bowes of Stamford, Connecticut, electronic mail and the like. Because messaging systems are well known, their descriptions have been limited for the sake of brevity to only that which is necessary to provide suitable background for an understanding of the present invention.

The recipient 180 may be individual, a household, a business or any other type of entity/organization that receives messages. Referring to Fig. 2 in view of Fig. 1, a template for a recipient preference profile 190 is shown. As necessary, the recipients 180 may access their profiles in order to make corrections and changes to any information. The recipient preference profile 190 is preferably stored in any suitable memory device (database server, memory farm, hard disk, etc.) as part of or operatively connected to the web server 110 and defines various parameters intended to control aspects of messages sent by the senders 155 that are intended for the recipient. Those skilled in the art will recognize that the parameters defined below are mutually exclusive and may be employed in any combination.



system that assigns SIC numbers for a variety of well known industry segments. As examples, automobile rental companies would be assigned a SIC number in the range of 2100 to 2199, while automobile dealerships would be assigned a SIC number in the range of 2400-2499 and service stations would be assigned a SIC number in the range of 4000 to 4099. Still other SIC numbers exist for financial institutions, health care providers, legal service providers, professional associations, utility service providers, governmental agencies and a variety of other industry segments. Accordingly, SIC numbers corresponding to industries that the recipient 180 desires to hear from could be placed in the interest data 190d while SIC numbers corresponding to industries that the recipient 180 does not want to hear from could be placed in the no interest data 190e.

The sender 155 may be an individual, a household, a business or any other type of entity/organization that generates messages intended for a recipient. However, it is primarily anticipated that most senders 155 would be businesses. Referring to Fig. 3 in view of Figs. 1 and 2, a template for a sender profile 195 is shown. As necessary, the senders 155 may access their profiles in order to make corrections and changes to any information.

The sender profile 195 is established by the sender 155 and may include: a sender identifier or ID data 195a; an e-mail address 195b; a physical address 195c; a series of SIC numbers 195d describing the sender; and notification setting data 195e. The sender ID data 195a may be a name (individual, household or business) or any other suitably unique identifier (alphanumeric, etc.) and simply distinguishes the sender 155 from other senders 155. The e-mail address 195b provides an electronic point of contact for the web server 110 to transmit messages to that are intended for the sender 155. The physical address 195c represents a street address for the sender 155. The series of SIC numbers 195d are, as defined and described above, used to categorize the subject matter of the sender's activities. The notification setting data 195e define how the web server 110 is to communicate with the sender 155. Those skilled in the art will recognize that the parameters defined above in the sender profile 195



are mutually exclusive and may be employed in any combination.

With the structure of the information delivery system 100 described as above, the operational characteristics will now be described. Referring primarily to Fig. 4 while referencing the structure of Figs. 1, 2 and 3, a schematic diagram of the information flow between the recipients 180, the web server 110 and the senders 155 that facilitates efficient and effective exchange of message preference information is shown.

Both recipients 180 and senders 155 provide data to the web server 110. Generally, the recipients 180 may establish their respective recipient preference profiles 190 with the web server 110 during a communication session in any conventional manner. Similarly, the senders 155 may establish their respective sender profiles 195 with the web server 110 during a communication session in any conventional manner. Those skilled in the art will recognize that the use of appropriate menu and/or command driven web pages that allow the recipient and sender to log on to and provide the sought after information described above may be accomplished in any conventional manner.

Senders 155 may access the recipient preference profiles 190 to gain better insights into how a particular recipient 180 wishes to be communicated with. Generally, it is anticipated that the senders 155 would access the profiles 190 at any time prior to dispatching a message for delivery to a particular recipient 180. The senders may access the profiles 190 through real time communication with the web server 110 or by downloading the profiles 190 on a periodic basis to their computer system for subsequent use. By having such ready access to up to date address information and recipient preferences, sender may communicate more efficiently and effectively with the recipients 180. Recipients 180 receive messages if they want them, in the format they want, when they want and where they want. By allowing recipients to control aspects of their incoming messages, their satisfaction is increased. Also, by utilizing the web server 110, faster updating of new addresses to senders is achieved because for updates need only occur at a single source. Thus, the delays and

costs associated with the traditional practices described above are substantially alleviated.

For example, the interest data 190d and the no interest data 190e may be established by the senders 155 to more effectively route messages to the intended recipient 180. Using the interest data 190d, the senders 155 may scan the profiles 190 looking for recipients 180 that are likely to be interested in their messages (solicitations, informational communication, etc.). Thus, the senders 155 would achieve greater effectiveness on their message delivery programs because they would have an indication the certain recipients 180 have a previously acknowledged interest in a particular industry or industries. On the other hand, using the no interest data 190e, the senders 155 may also increase the effectiveness of their message delivery programs while reducing costs. While scanning the profiles 190 in general or accessing profiles 190 for recipients 180 that have already be designated to receive a message, the sender may terminate further processing of certain messages by out sorting any recipients that have provided an indication that they are not likely to be interested in any messages (solicitations, information communication, etc.) from a particular industry or industries. In other words, messages intended for such recipients will be terminated (not generated, not dispatched, etc.). Thus, the senders 155 would save costs by foregoing to dispatch any messages to these recipients 180. Additionally, these recipients 180 benefit in that the receipt of undesired messages does not distract them.

As an additional feature, the web server 110 may also notify the senders 155 of changes to the recipient preference profiles 190. In this manner, the senders 155 are even more certain of having up to date information. As specified by the notification setting data 195e, the web server 110 may provide a notification (e-mail, physical mail, popup window or other indicator during a subsequent communication session with the web server 110, or other suitable technique) to the sender 155 that the recipient preference profiles 190 have changed. If a recipient 180 updates its recipient preference profile 190 to reflect

new information, then a change notification is generated. In the most preferred embodiment of the present invention, this is achieved by keeping track of which recipient preference profiles 190 the sender 155 has previously accessed and providing a notification to the sender 155 when there is a change to one of these previously accessed profile 190. The tracking may be accomplished in multiple ways. One example is to create and store a cookie. The cookie contains data created by the web server 110 that is stored on a sender's computer and provides a way for the web server 110 to keep track of a sender's activities. For example, the cookie may include a listing of the ID data 190a, along with a revision level or date, from all of the recipient profiles 190 that the sender 155 has accessed. Then, on each session with the web server 110, the data within the cookie may be contrasted with the recipient profiles 190 to determine if any changes have occurred. As another example, the listing of the ID data 190a, along with a revision level or date, from all of the recipient profiles 190 that the sender 155 has accessed may be stored along with the sender profile 195 at the web server 110. In this manner, the listing may be interrogated by the web server 110 on any periodic basis and without the need for the sender 155 to initiate a communication session. As yet another example, a listing of sender ID data 195a from those senders 155 accessing a particular recipient profile 190 may be associated with the particular recipient profile 190. Thus, if its recipient 180 changes the particular recipient profile 190, then the listing of senders 155 requiring notification is readily available. Still another feature is to allow the senders 155 the ability to add and remove recipient preference profiles 190 from the automatic notification process. Thus, the degree of relevance of the notifications they receive is improved.

Also, as an additional optional feature, if a new recipient 180 establishes a recipient preference profile 190, then a change notification may optionally be generated. In the most preferred embodiment of the present invention, this is achieved by scanning the interest data 190e of the newly added recipient preference profile 190 and notifying only those senders 155 that have matching

interest descriptions. The senders 155 may be provided with the entire new recipient preference profile 190 or some subset thereof, such as an abstract or abbreviated recipient preference profile 190. Here again, it is preferable to the senders 155 to control this notification feature by turning it on or off and specifying the amount of information received in the notification using their respective notification setting data 195e.

As yet an another optional feature, a sender 155 that discovered that the sender 155 operates in an industry designated in the no interest data 190e by a recipient 180 may not necessarily wish to terminate messages intended for the recipient 180. The original sender 155 may wish to explore possible synergistic relationships with other senders 155. For example, the sender 155 may wish to collaborate with a alternate sender 155 from an industry that has been specified in the interest data 190d from of the recipient 180. In this manner, the alternate sender 155 may serve as the primary contact with the recipient 180. Thus, the original sender 155 and the alternate sender 155 may collaborate on dispatching a message to the recipient 180. As an example, if a recipient 180 designates financial service companies in its no interest data 190e and home improvement companies in its interest data 190e, then a financial service company may partner with a home improvement company on sending a message to the recipient 180. In this example, the home improvement company (alternate sender) may take the "lead" on the message by describing various home improvement products and/or services that it provides while indicating that, if needed, a second mortgage line of credit to cover the costs associated with the home improvements are also available from their partner (original sender). As another example, the original sender 155 may still dispatch a message to the recipient without directly contacting a partner. To continue the theme introduced above, the original sender 155 may focus the message on obtaining a second mortgage line of credit to cover the costs associated with the home improvements and then provide a listing of home improvement specialists in proximity to the recipients 180.

Thus, it should now be understood that messages from senders falling into "no interest" categories might be modified in several ways. The examples have been discussed above are: (i) terminating the messages; (ii) redirecting the message as originating from a source other than the original sender; and (iii) editing the message to suit an interest of the recipient. To facilitate this process, the web server 110 may scrutinize the sender profiles 195 of other senders 155 in view of the recipient preference profile 190 and provide a listing of other senders that do match the recipient's interest data 190d. Here again, whether the sender 155 desires to avail itself of this additional service may be controlled by the notification setting data 195e.

Based on the above description and the associated drawings, it should now be apparent that the present invention improves many aspects of the exchange of messages between senders and recipients by facilitating the delivery of recipient preference information to senders.

Many features of the preferred embodiment represent design choices selected to best exploit the inventive concept as implemented in a particular messaging environment as pertaining to individual private recipients. However, those skilled in the art will recognize that various modifications can be made without departing from the spirit of the present invention to adapt the concepts of the present invention to address situations where the recipient is a business. For example, a wide variety of database management tools exist that can facilitate access to the recipient preference profiles. The exact manner in which these activities occur is subject to great variation due to practical design choices of the hardware, software, communications and data involved. As another example, the web server 110 may operate as the message dispatcher. Thus, the senders 155 provide instructions to the web server 110 that control the messaging process.

Therefore, the inventive concept in its broader aspects is not limited to the specific details of the preferred embodiments described above, but is defined by the appended claims and their equivalents.